

11. (New) A coupler for adding or removing tubulars to and from a drill string while continuing to flow drilling fluid down the drill string comprising:

(a) casing means for defining a chamber;

(b) valve means for dividing said chamber into upper and lower portions and for placing said upper and lower portions in fluid communication when said valve is open;

(c) inlet and outlet means for flowing drilling fluid into and out of said chamber;

(d) first gripping means for gripping said tubulars;

(e) second gripping means for gripping said drill string;
and

(f) said first and second gripping means being radially movable into and out of engagement with said tubulars and said drill string, respectively.

12. (New) A system for connecting and disconnecting a tubular to and from a drill string comprising:

(a) a coupler comprising a high pressure casing, a divider valve dividing the coupler into upper and lower chambers, and including means for rotating a tubular and or the drill string into and out of threaded connection;

(b) a pair of handlers each having first and second portions for gripping and releasing a tubular before and after said tubular is connected to said drill string; and

(c) power means for moving said first and second handlers vertically upwardly and downwardly relative to the vertical position of the other in a hand over hand motion.

13. (New) The system of Claim 2 wherein each of said handlers include flexible umbilical means for supplying power to said handlers.

14. (New) A coupler for connecting and disconnecting tubulars to and from a drill string while continuously recirculating drilling fluid through the drill string, the coupler comprising:

(a) chamber means for defining a pressure chamber;

(b) partition means for dividing said chamber into upper and lower portions.

(c) said partition means including valve means for placing said upper and lower portions in communication when said valve means are open;

(d) inlet and outlet means for continuously recirculating drilling fluid into and out of said chamber;

(e) first gripping means for gripping said tubulars;

(f) second gripping means for gripping said drill string;
and

(g) said upper and lower gripping means being radially movable into and out of engagement with said tubulars and said string, respectively, for connecting and disconnecting said tubulars while drilling fluid is continuously circulated into and out of said chamber.

15. (New) The coupler of Claim 14 wherein at least one of said upper and lower gripping means are positioned within said chamber.

16. (New) The coupler of Claim 14 wherein both of said upper and lower gripping means are positioned inside of said pressure chamber.

17. (New) The coupler of Claim 14 including slip means for engaging said drill string against vertical movement while permitting rotation of said drill string for continuing drilling during said connection and disconnection.

18. (New) The coupler of Claim 14 in combination with a second coupler identical to that set forth in Claim 14, and in combination with first and second handler means connected to

said first and second couplers, respectively, including power means for moving said couplers in relative vertical motions.

19. (New) The coupler of Claim 18 wherein said power means move said first and second hand over hand motions while said drill string continuously moves vertically.

20. (New) The coupler of Claim 14 wherein said partition means and said valve means comprise a ram preventer.

21. (New) A system for continuously drilling a bore hole while continuously circulating drilling fluid to and from said bore hole comprising:

(a) first and second casings, each of said casings supporting means for adding and removing tubulars from a drill string while continuously circulating drilling fluid to and from said bore hole;

(b) first and second handlers connected to said first and second casings, respectively; and

(c) power actuator means for moving said handlers vertically and horizontally for alternately engaging said first and second casings with said bore hole.

22. (New) The system of Claim 21 wherein said power actuator means include means for moving said first and second casings in hand-over-hand motion.